REMARKS

In the outstanding Office Action, the Examiner rejected claims 1-11, 16-19, and 23-28 under 35 U.S.C. §103(a) as being unpatentable over Takamoto et al., U.S. Patent No. 5,903,724, in view of Crisler et al., U.S. Patent No. 5,515,379; and rejected claims 12-15 under 35 U.S.C. §103(a) as being unpatentable over Takamoto in view of Crisler and in further view of Duquesnois et al., U.S. Patent No. 6,564,382. Reconsideration is requested.

Applicants note that an Information Disclosure Statement (IDS) is filed herewith. The references in the IDS were cited in commonly owned patent application number 09/649,953. This application is cited at page 6 of the current specification and the specification was previously amended (Response dated June 3, 2004) to recite this serial number. It is noted that patent application number 09/649,953 is currently allowed. However, some claims in that application were previously rejected, and these claims might be considered to contain some similar subject matter to the claims of the instant patent application. Further, a continuation will be filed to prosecute non-allowed claims in patent application number 09/649,953.

Minor amendments are made to dependent claims 16, 17, and 26. Applicants also note that independent claim 1 has been clarified through amendment. The amendment is not made for prior art purposes of patentability. In fact, independent claim 1 as presented in the Response dated 22 May 2006 will be used herein for the arguments given below. This is called the "unamended" claim herein.

Rejections of Claims 1-11 and 16-19

The Examiner rejected claims 1-11, 16-19, and 23-28 under 35 U.S.C. §103(a) as being unpatentable over Takamoto in view of Crisler. Applicants respectfully traverse. Neither Takamoto nor Crisler teach or suggest at least the subject matter of "determining time required to transmit the digital information based on the number of packets and a network speed", "receiving a request for transmitting digital information, the request comprising a

start time and an end time", and "accepting the digital information for transmission only if the time required to transmit is less than or equal to a difference between the transmit time and the end time" as recited in unamended claim 1.

With regard to the subject matter of "determining time required to transmit the digital information based on the number of packets and a network speed", the Examiner asserts that Takamoto discloses the portion "determining time required to transmit the digital information" but does not discuss the portion "based on the number of packets and a network speed". It is believed that the Examiner does not discuss the portion "based on the number of packets and a network speed" because Examiner admits that Takamoto does not disclose this portion of the subject matter. Nonetheless, the Examiner cites Takamoto at FIGS. 2, 9, 15-17; col. 6, line 65 to col. 7, line 10, col. 8; lines 13-36; and col. 11, line 22 to col. 12, line 54 against the portion "determining time required to transmit the digital information" and against other subject matter. It is unclear as to which of the sections of Takamoto the Examiner is using that discloses the portion "determining time required to transmit the digital information". Regardless, Applicants have examined all these cited sections (and all other sections) of Takamoto and cannot find disclosure or implication of "determining time required to transmit the digital information based on the number of packets and a network speed" as recited in unamended claim 1.

Takamoto does discuss a "transmission time 208". Regarding this, Takamoto states the following:

> Returning to FIG. 2, besides its user data (i.e., divided data) 209, each packet 208 is furnished with tags such as a destination ID 210, a flag 211 indicating a division of the data 203, a packet ID 212, a division count 213 (number of divided data), a division ID 214 indicating where the divided data is located in the post-division data order, and ***a transmission time 215 at which the packet is transmitted***[.] Upon reception of each data, the communication controller 206 removes the tags from each packet so as to reconstruct the initial data 204[.] During data reconstruction, the communication controller 206 refers to the division flag 211, packet ID 212, division count 213 and division ID 214 indicating the post-division data order. For each packet, the communication controller 206 returns a sub-ACK 207

> indicating completion of data transmission. If any one of the three transmitted packets has developed a transmission error, the occurrence of the error is written into the corresponding sub-ACK 207. In response, the communication controller 205 retransmits only the packet corresponding to the sub-ACK in question. Where any of the divided packets has developed transmission error, only the faulty packet is retransmitted; there is no need to retransmit all packets 208. When all sub-ACK's are normally returned, the three sub-ACK's are integrated into one ACK and the host 101 is notified of the normal completion of data transmission. Because the target data is divided into sub-ACK units each furnished with a division flag 211, a packet ID 212, a division count 213 and a division ID 214 indicating the post-division data order, the divided data are transmitted and received as an independent packet each through parallel packet transmission. The sub-ACK's are merged into one ACK which is then transferred to the source of the request. The procedure here is equivalent to conventional communication protocol and contributes to minimizing the amount of changes needed in the software of the host where the invention is applied. Details of the hardware and software of the above setup will be described later.

Takamoto at col. 6, line 65 to col. 7, line 33 (emphasis added). It is clear from this cited text that transmission time 208 is a time a packet is transmitted, and the transmission time 208 is used on the reception side to reconstruct the initial data of which the packet forms a part.

Takamoto also discloses the following:

> FIG. 17 is a flowchart of the sub-ACK processing step 909 in FIG. 12 for sub-ACK's of FIG. 16 received by the packet transmitting side. In step 1401, a check is made by referencing the transmission result 1301 of the sub-ACK to see if the divided packet has been normally transmitted. If the packet is found to be normally transmitted, step 1402 is reached; otherwise step 1406 is reached. In step 1406, a retransmission request is issued to the packet transmitting program of FIG. 12 (specifically step 904) regarding the abnormally transmitted packet. Step 904 of FIG. 12 started here is terminated when the packet has been retransmitted. At this point, a retransmission count is updated as will be described later by referring to FIG. 18 in connection with a sub-ACK control table. In step 1402, ***the time required for the transmission is calculated***. The result of the calculation serves as a parameter for determining an optimum division unit. The calculation may be performed by finding the difference between the transmission time 1307 in FIG. 16 and the current time. Specific means for knowing the time may illustratively be a timer incorporated in the communication controller. In step 1403, the current network load is obtained by the communication load measuring device 120 of

> FIG. 1. The communication load measuring device 120 is designed to acquire the current load of the network to which the communication controller 105 is connected. The network load is detected by checking to see how many packets have been received by the receiver 125 within a unit time. The load thus acquired serves as a parameter for determining an optimum division unit.

Takamoto at col. 11, line 66 to col. 12, line 26. The transmission time 1307 is a time at which a packet was transmitted to a receiver. See Takamoto at col. 11, lines 60-63. This transmission time 307 is sent back from the receiver to the transmitter, at which point the method in FIG. 17 occurs. The time required for the transmission in Takamoto is determined by comparing a current time and the time the packet was transmitted (transmission time 1307). There is no teaching or implication in this recited portion of Takamoto of "determining time required to transmit the digital information based on the number of packets and a network speed" as recited in unamended claim 1.

Furthermore, there is no teaching or implication in any other section of Takamoto of "determining time required to transmit the digital information based on the number of packets and a network speed" as recited in unamended claim 1.

Regarding Crisler, it is unclear as to which section of Crisler the Examiner asserts discloses the subject matter of "determining time required to transmit the digital information based on the number of packets and a network speed". The Examiner appears to cite FIGS. 2 and 3 and col. 4, lines 29-57 and col. 5, line 44 to col. 6, line 7 against both the subject matter of "determining time required to transmit the digital information based on the number of packets and a network speed" and the subject matter of "scheduling a transmit time for the digital information". With regard to col. 4, lines 29-57, Crisler states the following:

> When the first packet contains the request for n-time slots, the time slot allocator determines whether the n-time slots are presently available 203. When the n-time slots are presently available, the time slot allocator allocates the n-time slots to the communication unit such that the n-time slots are substantially contiguous in time 204. Thus, the n-time slots are allocated substantially adjacent to each other in a serial manner without any intervening time slots between them, except those time slots which are not available for

> data transmission. Time slots may be unavailable for data transmission because they are allocated to other services, such as system control activities. The contiguous allocation of the n-time slots extends for the length of the n-time slots. Therefore, depending on the number of time slots requested, the n-allocated time slots may occupy two or more consecutive time frames on the TDM channel. Upon allocation of the n-time slots, the communication unit utilizes the n-allocated time slots for transmitting information 205. Utilization of the n-contiguously allocated time slots results in improved channel throughput and less transmission time delay, especially under reduced channel loading conditions, compared to the known reservation ALOHA method (i.e., transmitting n-time slots in n-time frames at a rate of one time slot per time frame). Idle time slots residing between the allocated time slots in the reservation ALOHA technique are used in the present invention to transmit information. Thus, the present invention reduces transmission time and provides more efficient channel bandwidth utilization by utilizing the idle time slots.

Crisler, col. 4, lines 29-57. There is no disclosure or implication in this cited text of "determining time required to transmit the digital information based on the number of packets and a network speed".

With regard to col. 5, line 44 to col. 6, line 7, Crisler states the following:

> Upon receiving the first packet, the time slot allocator determines whether the first packet contains a request to transmit multiple packets 301. When the first packet does not contain the request to transmit multiple packets, the time slot allocator processes the first packet based on the predetermined processing procedure 202. When the first packet contains the request to transmit multiple packets, the time slot allocator determines whether the request can be presently accommodated 303. When the request can be presently accommodated, the time slot allocator allocates time slots to the communication unit such that the time slots are substantially contiguous in time 204.
>
> Upon allocation of the contiguous time slots, the communication unit begins transmitting information in the allocated time slots 305. The transmitted information generally comprises data or voice communications and other necessary information, such as error coding or addressing. While the communication unit is transmitting its information, the time slot allocator monitors the transmission to determine whether the communication unit has finished transmitting 306. While the communication unit is still transmitting, the time slot allocator continues to allocate contiguous

> time slots to the communication unit 204. When the communication unit has completed its transmission, the time slot allocator de-allocates any additional time slots previously allocated to the communication unit and the logic flow ceases at the END block. To indicate the end of the multiple packet transmission, the communication unit preferably transmits a data word as part of the last time slot's information to notify the time slot allocator of the transmission's conclusion.

Crisler at col. 5, line 44 to col. 6, line 7. There is no disclosure or implication in the cited text of "determining time required to transmit the digital information based on the number of packets and a network speed" as recited in unamended claim 1.

In particular, Crisler appears to be unrelated to basing time required to transmit on, e.g., a network speed. For instance, Crisler simply reserves some number of time slots in a time-division multiplex system, based apparently on whether a received packet contains a request for N time slots. See, e.g., steps 201, 203, 204, and 205 of FIG. 2 of Crisler. Applicants cannot find disclosure or implication in any section of Crisler of "determining time required to transmit the digital information based on the number of packets and a network speed" as recited in unamended claim 1.

Therefore, neither Takamoto nor Crisler disclose or imply "determining time required to transmit the digital information based on the number of packets and a network speed" as recited in unamended claim 1. The combination of Takamoto and Crisler consequently does not disclose or imply this subject matter, and unamended claim 1 is patentable over the combination of Takamoto and Crisler for at least this reason.

With regard to the subject matter of "receiving a request for transmitting digital information, the request comprising a start time and an end time", the Examiner admits that Takamoto does not disclose "receiving, determining, scheduling, and accepting with specific conditions". Accordingly, Takamoto cannot teach or suggest "receiving a request for transmitting digital information, the request comprising a start time and an end time" and "accepting the digital information for transmission only if the time required to

transmit is less than or equal to a difference between the transmit time and the end time" as recited in unamended claim 1.

With regard to Crisler, it discloses:

> Time slots may be allocated within a communication system when a communication unit transmits a first packet to a time slot allocator. Upon receiving the first packet, the time slot allocator determines whether the first packet contains a request for allocation of n-time slots or a request to transmit multiple packets. When the first packet contains the request for allocation of n-time slots, the time slot allocator allocates the n-time slots to the communication unit when the n-time slots are available, wherein the n-time slots are allocated contiguous in time. When the first packet contains the request to transmit multiple packets, the time slot allocator allocates time slots to the communication unit until the multiple packets have been transmitted, wherein the time slots are allocated contiguous in time.

Crisler at Abstract. Crisler fails to teach or suggest the subject matter of "receiving a request for transmitting digital information, the request comprising a start time and an end time" or "accepting the digital information for transmission only if the time required to transmit is less than or equal to a difference between the transmit time and the end time" as recited in independent unamended claim 1.

For instance, Crisler discloses that if the N time slots are not available (step 203 in FIG. 2 of Crisler), then the request is queued (step 206 in FIG. 2 of Crisler) until the time slots are available (step 207 in FIG. 2 of Crisler). At this point, the N time slots are allocated (step 204 in FIG. 2 of Crisler) and are then transmitted (step 205 in FIG. 2 of Crisler). The disclosure of Crisler in no way indicates that digital information is accepted for transmission only if the time required to transmit is less than or equal to a difference between a determined transmit time and an end time provided in a request, as recited in unamended claim 1.

Neither Takamoto nor Crisler, taken alone or in combination, teach or suggest "receiving a request for transmitting digital information, the request comprising a start time and an end time" or "accepting the digital information for transmission only if the time

required to transmit is less than or equal to a difference between the transmit time and the end time" as recited in unamended claim 1. Therefore, independent unamended claim 1 is patentable over the combination of Takamoto and Crisler.

The Examiner asserts that Crisler explicitly discloses accepting the digital information for transmission only if the requested time slots are presently available. The Examiner references figure 2 steps 203-205, which the Examiner asserts are functionally equivalent to the claimed receiving and accepting steps. See page 9, section (A) of the outstanding Office Action. However, unamended claim 1 recited "receiving a request for transmitting digital information, the request comprising a start time and an end time". In other words, there is a request that includes a start time and an end time. In Crisler, there is no such request, as the only item that might be considered to be a "request" is a packet that contains a request for N time slots (see step 201 of FIG. 2 of Crisler). A request for N time slots is not a request that includes a start time and an end time.

Because independent unamended claim 1 is patentable, dependent claims 2-11, 16-19, and 23-28 are also patentable for at least the reasons give with respect to unamended claim 1. It is noted that the amended claim 1, as clarified herein by amendment, is further patentable over the cited references.

It is further noted that Examiner asserts a number of obviousness arguments that are not supported by references. For instance, claim 23 recites "A method, as in claim 1, further comprising determining a cost for transmitting the digital information and billing the cost to a client corresponding to the digital information." In rejecting this claim and claims 6, 7, and 28, the Examiner asserts that "it would have been obvious and known to one of ordinary skill in the art at the time the invention was made to produce[] a bill on receipt of acknowledgement of the digital information (after providing a service) because it would have improved system management to determine the cost of network usage." None of Takamoto or Crisler is related to or discusses billing a client.

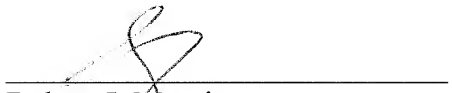
Applicants respectfully request the Examiner produce a reference that supports the Examiner's assertion with regard to billing a client for the transmission of digital information. Applicants respectfully request such references for at least the rejections of claims 8-10; 6, 7, 23, and 28.

Furthermore, with regard to dependent claim 2, this claim recites "A method, as in claim 1, where the digital information is transmitted at a first price." The Examiner cites portions of Crisler that are unrelated to and do not discuss or imply transmitting information at a price. As noted in Applicants' specification, "price" is, e.g., a measure of monetary value. See, e.g., billing cost 734 of FIG. 7 or method 139 shown in FIG. 14. Further, Takamoto is also unrelated to and does not discuss or imply transmitting information at a price. Therefore, claim 2 is patentable over the combination of Takamoto and Crisler.

Regarding the rejections of claims 12-15, as claim 1 is patentable over the combination of Takamoto and Crisler, claims 12-15 are patentable over the combination of Takamoto and Crisler and Duquesnois for at least the reasons given with respect to claim 1.

For at least these reasons, Applicants respectfully submit that claims 1-19 and 23-28 are patentable over the cited art and request the rejections to claims 1-19 and 23-28 be withdrawn.

Respectfully submitted:



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